AMENDMENT TO THE CLAIMS

1. (previously presented): A method for use by a microwave level transmitter to detect a reflected pulse of a transmitted microwave pulse from a first material interface, the method comprising:

calculating an estimated first reflected pulse amplitude as a function of a reference amplitude of the transmitted microwave pulse; and

detecting the reflected pulse from the first material interface using the estimated first reflected pulse amplitude.

2. (previously presented): The method of claim 22, wherein:

the first material interface is formed between the first and second materials.

3. (previously presented): The method of claim 1, wherein the estimated first reflected pulse amplitude is further calculated as a function of at least one of an attenuation factor and a range factor.

4. (previously presented): The method of claim 22, further comprising

calculating an estimated second reflected pulse amplitude as a function of the reference amplitude, the correction factor, the first dielectric parameter, the second dielectric parameter, and a third dielectric parameter having a value corresponding to a dielectric of a third material located below the second material.

5. (previously presented): The method of claim 4, wherein:

a second material interface is located between the second and third materials; and

the method includes detecting a second reflected wave pulse, corresponding to a portion of the transmitted microwave pulse reflected from the second material interface, using the estimated second reflected pulse amplitude.

6. (previously presented): The method of claim 4, wherein the estimated second reflected pulse amplitude is further calculated as a function of at least one of an attenuation factor and a range factor.

7. (previously presented): The method of claim 22, further comprising

calculating an estimated fiducial pulse amplitude as a function of the reference amplitude, the correction factor, and the first dielectric parameter.

8. (previously presented): The method of claim 7, wherein:

a fiducial interface is formed between the antenna and the first material; and

the method includes detecting a fiducial pulse, corresponding to a portion of the transmitted microwave pulse reflected from the fiducial interface, using the estimated fiducial pulse amplitude.

9. (previously presented): The method of claim 7, wherein the estimated fiducial pulse amplitude is further calculated as a function of at least one of an attenuation factor and a range factor.

10. (previously presented): A method for automatically setting threshold values for use by a microwave level transmitter to detect reflected pulses corresponding to portions of a transmitted microwave pulse, the method comprising:

selecting a first dielectric parameter corresponding to a dielectric of a first material adjacent an antenna;

setting a reference amplitude relating to the transmitted microwave pulse;

setting a second dielectric parameter to a value corresponding to a dielectric of a second material located below the first material;

calculating a first pulse amplitude as a function of the reference amplitude, and the first and second dielectric parameters; and

setting a first threshold value as a function of the first pulse amplitude.

11. (original): The method of claim 10, wherein:

a first material interface is formed between the first and second materials; and

a first reflected pulse, corresponding to a portion of the transmitted microwave pulse reflected at the first material interface, is detectable using the first threshold value.

12. (currently amended): The method of claim 23, further comprising:

setting a third dielectric parameter to a value corresponding to a dielectric of a third material located below the second material;

calculating a second pulse amplitude as a function of the reference amplitude, the correction factor, and the first, second and third dielectric parameters; and

setting a second threshold value as a function of the second pulse amplitude, whereby a second reflected wave pulse, corresponding to a portion of the microwave pulse reflected at a second material interface, can be

detected using the second threshold value.

13. (previously presented): The method of claim 23, further comprising:

calculating a fiducial pulse amplitude as a function of the reference amplitude, the correction factor, and the first dielectric parameter; and

setting a fiducial threshold value as a function of the fiducial pulse amplitude, whereby a fiducial pulse, corresponding to a portion of the microwave pulse reflected off a fiducial interface, is detectable using the fiducial threshold value.

14. (original): The method of claim 10, wherein the first threshold value is further a function of at least one of an attenuation factor, a range factor, an offset value, and temperature.

15. (original): The method of claim 12, wherein at least one of the first and second threshold values is further a function of at least one of an attenuation factor, a range factor, an offset value, and temperature.

16. (currently amended): The method of claim 10, further comprising:

receiving a calculated dielectric constant relating to the dielectric constant of the second material from a dielectric constant calculator;

re-calculating the ~~estimated~~ first pulse amplitude using the calculated dielectric constant; and

setting the first threshold value as a function of the re-calculated estimated first pulse amplitude.

17. (previously presented): A radar level transmitter for providing level detection of materials in a container, the transmitter comprising:

an antenna;

a transceiver coupled to the antenna and configured to transmit a microwave pulse having a transmit pulse amplitude using the antenna and produce a signal representing reflected wave pulses;

a microprocessor system coupled to the transceiver and adapted to control the transceiver and process the signal;

a threshold calculation module executable by the microprocessor system and adapted to calculate a first threshold value as a function of the transmit pulse amplitude and properties of the materials; and

a level calculation module executable by the microprocessor system and adapted to establish a level of a first material interface using the signal and the first threshold value.

18. (previously presented): The radar level transmitter of claim 17, wherein:

the threshold calculation module is further adapted to calculate a second threshold value as a function of the transmit pulse amplitude and the properties of the materials; and

the level calculation module is further adapted to calculate a level of a second material interface using the signal and the second threshold value.

19. (original): The radar level transmitter of claim 17, including an input/output port adapted to transmit a level output that is indicative of the first material interface.

20. (previously presented): The radar level transmitter of claim 17, including a dielectric constant calculator adapted to calculate a dielectric parameter relating to one of the properties of the materials as a function of the transmit pulse amplitude and a first reflected wave pulse corresponding to a portion of the microwave pulse reflected at the first material interface, and provide the dielectric parameter to the threshold calculation module for use in establishing the level of the first material interface.

21. (previously presented): The method of claim 1 including calculating the estimated first reflected pulse amplitude as a further function of:

a first dielectric parameter having a value corresponding to a dielectric of a first material adjacent to an antenna; and

a second dielectric parameter having a value corresponding to a dielectric of a second material located below the first material.

22. (previously presented): The method of claim 21 including calculating the estimated first reflected pulse amplitude as a further function of a correction factor.

23. (previously presented): The method of claim 10 including setting a correction factor, wherein the first pulse amplitude is calculated as a function of the correction factor.